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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,431

01/28/2005

Hubert Sjoerd Blaauw

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06/15/2007

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

LANDRUM, EDWARD F

ART UNIT

PAPER NUMBER

3724

MAIL DATE

DELIVERY MODE

06/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,431

Applicant(s)

BLAAUW ET AL.

Examiner

Edward F. Landrum

Art Unit

3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Foreign Patent, Translation of the Foreign Patent, and Non-Patent Literature.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 8/17/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

1. The drawings are objected to because Figure 8 is new matter as applicant's disclosure is not as detailed as what is shown in the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the electric shaver must be shown or the feature(s) canceled from the claim(s), as Figure 8 is new matter. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because Figures 1 and 3 are photographs which cannot be clearly reproduced in the printed patent, therefore the examiner is requiring

Art Unit: 3724

the applicant to provide drawings or reproducible photographs to replace Figures 1 and 3, see MPEP 37 CFR 1.84. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because of the use of legal phraseology such as "said" and "means". Correction is required. See MPEP § 608.01(b).

Claim Objections

Art Unit: 3724

5. Claim 7 is objected to because of the following informalities: The claim is considered by the examiner to be independent but the claim depends on another claim, this is not a standard practice. For examination purposes the examiner will include all limitations from claim 1 in claim 7. Appropriate correction is required.

Double Patenting

6. Claims 17 and 18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/522287. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference is the material used for the cutting blade.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation "the stainless steel" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

Art Unit: 3724

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4-7, 10, 13, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Domoto et al (U.S Patent No. 6,354,008), hereinafter Domoto, in view of Oiwa (Japanese Patent No. 60162766), and in further view of Rosenhan (U.S Patent No. 5,953,969).

Domoto teaches (see Figures 1-3, 6, and 7) an electric shaver with a plurality of steel cutting elements coated on all sides of the blade with a nitride based film having a hardness of at least 1000 HV but possibly extending above 1500 HV. The nitride based film is applied to the cutting blade using a plasma CVD method. The cutting blades of Domoto are capable of working in dry or additive type shavers as both are functional equivalents and would have no bearing to how the cutting blades were made as most electric dry shavers are made to still be cleaned by a cleaning solution or water.

Domoto teaches all of the elements of the current invention as stated above except the steel cutting element being a maraging or precipitation hardening steel, said steel being hardened by plasma nitriding which forms a top layer of super saturated nitrogen and a diffusion layer adjoining the top layer to the hardness of the steel.

Oiwa teaches (see included translated Constitution) that it is old and well known to apply a nitride layer to a steel electric shaver blade by means of plasma nitriding.

Rosenhan teaches (Col.1, lines 15-23) that while CVD processes for applying strengthening layers to a tool is an option material deposited on the tool can tear or chip off when the material is used. Furthermore, Rosenhan teaches (Col. 2, lines 19-55) a maraging steel is a good steel for a plasma diffusion process and that a plasma diffusion process includes heating the material by precipitation hardening and combining the heating of the material with a plasma diffusion process. This method creates a tool that wears about 10 times less than other known tools.

It would have been obvious to have modified Domoto to incorporate the teachings of Oiwa and Rosenhan to use maraging steel for the cutting blades of the electric shaver and apply the nitride layer to the cutting blades of the electric shaver by means of a plasma nitride process that included precipitation hardening the cutting blades. Maraging steel is a steel that can be easily nitrided and resists wear and crack propagation. Plasma nitriding the maraging steel cutting members would make the cutting blades of the electric shaver wear 10 times less than other known tools thereby prolonging the life of the cutting blades.

Domoto does not explicitly state that the electric shaver is a dry shaver but it is inherent that the electric shaver of Domoto is a dry shaver as there is no mention of a lubricant or other liquid used with the shaver.

11. Claims 2, 3, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified device of Domoto in view of Yamada et al (U.S Patent No. 5,857,260), hereinafter Yamada.

The modified device of Domoto teaches all of the elements of the current invention as stated above except the thickness of the top layer being in the range of 5 μm to 25 μm , and the thickness of the diffusion layer being in the range of 5 μm to 20 μm .

Yamada teaches that the optimal total thickness of hardness layers covering a blade is between 2 μm and 15 μm (Col. 1, lines 66-67; Col. 2, lines 1-5).

It would have been an obvious to have modified the modified device of Domoto to incorporate the teachings of Yamada to make the total thickness of the top layer and the diffusion layer 2 μm to 15 μm to provide for the best cutting conditions for both the outer and inner cutting blades.

Furthermore, it would have been an obvious matter of design choice to a person of ordinary skill in the art to make the thickness of the top layer between 5 μm to 25 μm and the thickness of the diffusion layer between 5 μm to 20 μm because discovering the optimum or workable ranges for the thickness of the top layer and the diffusion layer would have been a mere design consideration based on the material properties of both the cutting blade and the nitride based top layer. Such a modification would have involved only routine skill in the art to accommodate the properties of the cutting blade and the nitride based top layer. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified device of Domoto, as stated in section 10, in view of Gerasimov et al (U.S Patent No. 6,584,691), hereinafter Gerasimov.

The modified device of Domoto teaches all of the elements of the current invention as stated above except the electric shaver being an additive type shaver.

Gerasimov teaches (see Figure 39) providing a solid soap additive 116 to an electric shaver for the purpose of improving lubricity as well as condition a user's skin or beard.

It would have been obvious to have modified the device of Domoto to incorporate the teachings of Gerasimov to provide an additive on the shaver. Doing so would improve lubricity of the shaver as well as condition a user's skin or beard during shaving.

13. Claim 17 and is rejected under 35 U.S.C. 103(a) as being unpatentable over Domoto, in view of Oiwa (Japanese Patent No. 60162766), and in further view of Cole et al (U.S Patent No. 4,259,126), hereinafter Cole.

Domoto teaches all of the elements of the current invention as stated above except the steel cutting element being a austenitic steel, said steel being hardened by plasma nitriding.

Oiwa teaches (see included translated Constitution) that it is old and well known to apply a nitride layer to a steel electric shaver blade by means of plasma nitriding.

Cole teaches (see Col. 1) teaches that it is old and well known in the razor art to make cutting blades out of austenitic steel.

Art Unit: 3724

It would have been obvious to have modified Domoto to incorporate the teachings of Oiwa and Cole to use austenitic steel for the cutting blades of the electric shaver and apply the nitride layer to the cutting blades of the electric shaver by means of a plasma nitride process. The physical properties of austenitic steel resist wear and crack propagation. Plasma nitriding the austenitic steel cutting members would make the cutting blades of the electric shaver wear even less and help prevent chipping and flaking which is known in standard CVD processes.

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified device of Domoto as stated in section 13, in view of Rosenhan.

The modified device of Domoto teaches all of the elements of the current invention as stated above except precipitationally hardening the steel prior to or simultaneously with the plasma nitriding.

Rosenhan teaches (Col. 2, lines 19-55) a maraging steel is a good steel for a plasma diffusion process and that a plasma diffusion process includes heating the material by precipitation hardening and combining the heating of the material with a plasma diffusion process. This method creates a tool that wears about 10 times less than other known tools.

It would have been obvious to have modified the modified device of Domoto to incorporate the teachings Rosenhan to apply the nitride layer to the cutting blades of the electric shaver by means of a plasma nitride process that included precipitation hardening the cutting blades. Plasma nitriding and precipitation hardening the steel cutting members would make the cutting blades of the electric shaver wear much less

Art Unit: 3724

than other known tools as well as not effect the positive properties of the core material, thereby prolonging the life of the cutting blades.

Response to Arguments

15. Applicant's arguments filed 5/4/2007 have been fully considered but they are not persuasive.

Regarding applicants comments discussing Oiwa. The translated abstract and written constitution of Oiwa, copyrighted in 1985, clearly disclose all of the evidence needed to use Oiwa in a rejection. Therefore, the entire document does not need to be translated. However a translation has been provided.

Regarding applicant's comments on there being no teaching that the top layer of the plasma nitriding hardened layer supersaturated with nitrogen and a diffusion later adjoining the top layer with a hardness ranging from the top layer to the hardness of the steel before plasma nitriding. These limitations are intrinsic to the plasma nitriding process when plasma nitriding a metal. To support this, the examiner has provided three references that teach these facts. Liang et al (2001) teaches (Pg. 6, Col. 1, Paragraph 2) that plasma nitriding a surface makes that surface have a top layer consisting of supersaturated nitrogen. Blawert et al (1998) teaches (Pg. 2, Col. 1, lines 2-5) teaches that plasma nitriding a surface causes a top layer to be formed along with a diffusion layer between the top layer and the material being nitrided. Askeland (1994) teaches (see Figures 5 and 6, the A and B characters have been added by the examiner to the upper Figure because the reproduction was made in black and white) that a diffusion layer is a layer formed between the two materials where the two

Art Unit: 3724

materials exchange atoms. Each edge of the diffusion layer takes properties that abut the edge of the diffusion layer as more of that abutment materials atoms are found there compared to the other material found on the opposite edge of the diffusion layer.

In regards to the Wikipedia references, the references have been removed as they are not necessary. The properties of maraging and austenitic steel are old and well known. Examiner was just providing sources that could be easily viewed by the applicant or the applicant's representative if there were any questions.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sanderson (U.S Patent No. 3,743,551) teaches elements of the current invention.

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Art Unit: 3724

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward F. Landrum whose telephone number is 571-272-5567. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EFL
5/29/2007



BOYER D. ASHLEY
SUPERVISORY PATENT EXAMINER